File Copy

RS - INT
REGENERATION
Planting-Seeding
Fp - 8

January 20, 1941

COMBINATION SEEDING - PLANTING PLOTS

PROGRESS REPORT 1940

Introduction

Of the three Combination Seeding-Planting Plots established in the fall of 1939, two, Little Baldy and Elk Creek, yielded survivals of direct seeding sufficient to justify summarization. On the Granite Creek plot direct seeding failed to produce. Whether rodents consumed the seed or whether the seed just failed to germinate is not known.

The planting data are summarized for all three plots.

Direct Seeding

Scalping. Whereas spot scalping seems to favor seedling survival, this experiment does not indicate large scalps (30 inches diameter) to be more favorable than small scalps (12 inches diameter) as normally would be expected. On the Little Baldy plot we found 10.0 percent and 6.7 percent spot survival on small and large scalps respectively and 6.7 percent and 5.0 percent on the Elk Creek plot. One reason for this unexpected difference may be the fact that both plots are heavily covered by weeds and brush. Since scalping is only a surface treatment, it may be that living brush and weed roots compete with the seedling roots below the point of the scalp effectiveness. However, reasoning in that manner, while it tends to put the large and small scalps on an equal basis insofar as subsurface competition is concerned does not excuse the fact that the average of the two plots gives small scalped spots 8.3 percent spot survival as against 5.8 percent for the large scalps.

The average no-scalp spot survival is 3.3 percent. Thus it would seem that reduction of surface competition by scalping does favor seedling survival.

Manure and fertilizer. Manured spots, at the end of the season, contained no live seedlings. It is noted that all seedlings on these spots were dead by the middle of August. Probably the porous manure tends to dry faster than the seedling can put its root down, thus drought-killing the seedling. The chemical concentration of the "fortified" manure may also have been too strong.

Fertilized spots came through on Elk Creek with 5.0 percent survival while on the Little Baldy plot there was no survival after the middle of August. Looking back to initial establishment we find 32 fertilized spots established on Little Baldy at first inspection as against 24 on Elk Creek. It may be that the surviving 5.0 percent (3 out of 60) on Elk Creek were so planted as to have missed the fertilizer.

It is thought that the poor results obtained from fertilized spots may be due to a super strong concentration or to a super amount of fertilizer being applied to the spots.

Planting

Whether it be a difference in handling or a difference in form, age, and vigor, the Bannock Nursery stock produced a greater total survival percentage than did the Prison Nursery stock. Combining fall and spring planting on all plots we find 9.3 percent survival of Bannock stock as against 4.1 percent survival of Prison stock. The Bannock stock showed considerably greater superiority in the spring plantings than in the fall plantings.

Time of planting (fall vs. spring). Results of this experiment would indicate that spring planting is desirable over fall planting. However, the number of transplants surviving out of the number planted is so small that a conclusive statement is of doubtful worth. Spring planting yielded 8.8 percent survival while fall planting yielded 4.4 percent survival.

Scalping. As was the case of direct seeding, scalping tends to favor transplant survival. There seems to be no difference in survival between the large and small scalped spots, since immediate root competition would be reduced to the same degree on both large and small scalped spots under a system of shovel planting. Averaging Bannock and Prison stock we find the following survival percentages: no scalp, 6.0; small scalp, 6.9; large scalp, 6.9.

Manure and fertilizer: Again the no-manure or fertilizer spots yielded the greatest number of survivals. Manured spots were slightly ahead of fertilized spots. Survival percentages are as follows: N, 16.3; M, 2.4; F, 1.1.

Direct Seeding vs. Planting (unfertilized spots)

It is interesting and possibly significant to note that at the end of one year direct seeding appears to be establishing itself more favorably than planting. On the Little Baldy plot direct seeding spot survival amounted to 18.3 percent while planting survival fell to 3.3 percent. Direct seeding on the Elk Creek plot carried through the year to 11.7 percent spot survival, whereas planting amounted to only 7.6 percent. The average of the two plots gives 15.0 percent spot survival for direct seeding and 5.4 percent for planting.

As mentioned above, direct seeding on Granite Creek was almost a complete loss, whereas planting on this same plot survived to a greater extent than on any of the other plots. By averaging all planting we find a net survival of 16.4 percent. By averaging all direct seeding (Granite Creek plot included as 0) the result is 10.0 percent spot survival.

HENRY L. KETCHIE
Jr. Field Assistant.

(Note: This report was prepared to accompany the original compilations and summary tables, to which reference should be made for further detail.)